

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
7 July 2005 (07.07.2005)

PCT

(10) International Publication Number  
**WO 2005/061437 A2**

(51) International Patent Classification<sup>7</sup>: **C07C 233/00**

(21) International Application Number:  
PCT/GB2004/005416

(22) International Filing Date:  
23 December 2004 (23.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/532,111 23 December 2003 (23.12.2003) US  
2003 01928 23 December 2003 (23.12.2003) DK

(71) Applicant (for all designated States except US):  
**ZEALAND PHARMA A/S** [DK/DK]; Smedeland  
26B, DK-2600 Glostrup (DK).

(71) Applicant (for MN only): **KIDDLE, Simon** [GB/GB];  
York House, 23 Kingsway, London Greater London WC2B  
6HP (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **LARSEN, Bjarne,**  
**Due** [DK/DK]; Jyllingevej 16.1., DK-2720 Vanlose (DK).

(74) Agents: **KIDDLE, Simon** et al.; Mewburn Ellis LLP, York  
House, 23 Kingsway, London Greater London WC2B 6HP  
(GB).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— without international search report and to be republished  
upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: ISOPEPTIDE GAP JUNCTION MODULATORS

(57) Abstract: The invention relates to isopeptides capable of modulating intracellular gap junctional communication. The invention further relates to methods of using the isopeptides to maintain or enhance such communication. In one aspect, the isopeptides are antiarrhythmic isopeptides which target the same cells targeted by AAP, AAP10, HP5, and/or functional analogs thereof, i.e. the isopeptides are able to modulate the function of these cells by agonizing or antagonizing the function of AAP, AAP10, HP5, and/or functional analogs thereof.



WO 2005/061437 A2